

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 21 (Cancelled).

22. (NEW) A system for manipulating a selected material using a focused beam of laser light, comprising:

a source of laser light having a wavelength selected from the visible and ultraviolet range wherein the maximum wavelength is less than the minimum wavelength of infrared light and the selected material having a weak absorption coefficient in the visible and ultraviolet wavelength range of the laser light used to manipulate the selected material;

an optical component acting on the laser light to form a plurality of optical traps; and

an optical system for providing a power level for each of the optical traps to control energy input to the selected material and along with the weak absorption coefficient of the selected material for the laser light in the range selected from the visible and ultraviolet range significant damage to the selected material is thereby avoided.

23. (NEW) The system of claim 22, wherein the beam of laser light comprises a continuous-wave laser beam.

24. (NEW) The system of claim 22, wherein the wavefront of the focused beam of laser light is shaped to achieve a predetermined trapping force which is enhanced relative to a focused beam of laser light that has not been shaped.

25. (NEW) The system of claim 22, wherein the plurality of optical traps comprise holographic optical traps.

26. (NEW) A system for manipulating a material using a focused beam of laser light, comprising the steps of:

a source of focused beam of laser light output in a wavelength range less than the wavelength range for infrared light;

a diffractive optical element for creating a plurality of laser beams;

an optical element for focusing the plurality of laser beams to create a plurality of optical traps;

an optical component to apply the plurality of optical traps to the material for manipulating discrete portions of the material; and

a controlled power supply to provide a power level to each of the optical traps and along with the wavelength of the beam light thereby avoiding substantial damage to the material.

27. (NEW) The system of claim 26, further including the step of using laser light with a wavelength to match a transmission window in the material so as to minimize light absorption.